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PRODUCT REVISION: 0

DA1921SX

CAT-5 COMPUTER VIDEO RECEIVER USER'S GUIDE

ALTINEX
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PRECAUTIONS / SAFETY WARNINGS 1

Please read this manual carefully before using your **DA1921SX**. Keep this manual handy for future reference. These safety instructions are to ensure the long life of your **DA1921SX** and to prevent fire and shock hazard. Please read them carefully and heed all warnings.

1.1 GENERAL

- Unauthorized personnel shall not open the unit since there are high-voltage components inside.
- Qualified ALTINEX service personnel, or their authorized representatives must perform all service.

1.2 SAFETY GUIDELINES FOR THE RACK-MOUNTING OF THE DA1921SX

- Maximum operating ambient temperature is 35 (degrees C).
- Never restrict the air flow through the devices' fan or vents.
- When installing equipment into a rack, distribute the units evenly. Otherwise, hazardous conditions may be created by an uneven weight distribution.
- Connect the unit to a properly rated supply circuit.
- Reliable Earthing (Grounding) of Rack-Mounted Equipment should be maintained.

1.3 INSTALLATION

- For best results, place the **DA1921SX** on a flat, level surface in a dry area away from dust and moisture.
- To prevent fire or shock, do not expose this unit to rain or moisture. Do not place the **DA1921SX** in direct sunlight, near heaters or heat radiating appliances, or near any liquid. Exposure to direct sunlight, smoke, or steam can harm internal components.
- Handle the **DA1921SX** carefully. Dropping or jarring can damage internal components.
- Do not place heavy objects on top of the **DA1921SX**. If the **DA1921SX** is to be mounted to a table or wall, use only ALTINEX-made mounting accessories, such as the mount mini-brackets **MB1001** and cables for optimum setup.
- To turn off the main power, be sure to remove the adapter from the power outlet. The power outlet socket should be installed as near to the equipment as possible, and should be easily accessible.
- Do not pull the adapter or any cable that is attached to the **DA1921SX**.
- If the **DA1921SX** is not used for an extended period, disconnect the adapter from the power outlet.

1.4 CLEANING

- Unplug the **DA1921SX** (adapter or cord) before cleaning. Clean surfaces with a dry cloth. Never use strong detergents or solvents, such as alcohol or thinner. Do not use a wet cloth or water to clean the unit.

1.5 FCC / CE NOTICE

- This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

- Any changes or modifications to the unit not expressly approved by ALTINEX, Inc. could void the user's authority to operate the equipment.

ABOUT YOUR DA1921SX 2

The **DA1921SX** is a high-resolution 1-in 2-out computer video amplifier/receiver, which converts differential signals to single ended video signals and distributes the source to large screen projectors or other displays. The **DA1921SX** is designed for use together with an ALTINEX CAT-5 UTP Computer Video Transmitter, such as model no. **DA1920SX**. The **DA1921SX** receives computer video signals over twisted pair CAT-5 UTP (Category 5, 5e, 6) type cable.

The **DA1921SX** is compact and easy to use. It offers a female RJ-45 input connector and two fully buffered female 15-pin HD output connectors.

The **DA1921SX** can receive signal resolutions between VGA and UXGA. Used together with an ALTINEX CAT-5 Computer Video Transmitter and properly adjusted with the built-in equalization controls, the maximum cable distance is approximately 500 feet/152 meters for VGA (640 x 480, 60 Hz refresh rate) and 250 feet/76.2 meters for UXGA (1600 x 1200, 60 Hz refresh rate). Please see the complete specifications for other resolutions.

Note that all cables for the **DA1921SX** must be ordered separately.

TECHNICAL SPECIFICATIONS 3

FEATURES/DESCRIPTION	DA1921SX
GENERAL	
Inputs	One
Input Connector	RJ-45
Outputs	Two
Local Monitor Connector	15-pin HD Female
Main Output Connectors	15-pin HD Female
Cable Distance Limitations	
Signal Resolution Distance	640 x 480: 500ft/152m 800 x 600: 450ft/137m 1024 x 768: 400ft/122m 1280 **x** 1024: 350ft/107m 1600 x 1200: 250ft/76m

Table 1. **DA1921SX** General

MECHANICAL	DA1921SX
Material	0.1" Al
Finish	ALTINEX Grey
Top Panel	Lexan Overlay
Height (inches)	3.00in (76mm)
Width (inches)	4.50in (114mm)
Depth (inches)	1.00in (25mm)
Weight (pounds)	0.40lb (0.18kg)
Ship Weight (pounds)	2.4lbs (1.09kg)
T° Operating	10°C-35°C
T° Maximum	50°C
Humidity	90% non-condensing
MTBF (calculations)	40,000 hrs

Table 2. **DA1921SX** Mechanical

ELECTRICAL	DA1921SX
Input Video Signal	
Analog Signal Level	Differential ±0.75V max
Impedance	50 Ohms
Input Sync Signal	
Horizontal, Vertical, & C-Sync	Differential ±1V
Impedance	50 Ohms
Output Video Signals	
Analog Signal Level	1.5V p-p
Fall/Rise Time (ns)	2.0
Impedance	75 Ohms
Output Sync Signals	
Horizontal Sync	TTL (+/-)
Vertical Sync	TTL (+/-)
Frequency Compatibility	
Typical Video Bandwidth	350 MHz @ -3 dB
Minimum Video Bandwidth	300 MHz @ -3 dB
Horizontal	15-200 kHz
Vertical	47-180 Hz
Cable Equalization at Each Output	-3 dB @ 120 MHz
Coupling	AC
Cross-talk	-40 dB @ 10 MHz
Power	
External Power Adapter	9V DC, 500 mA

Table 3. **DA1921SX** Electrical

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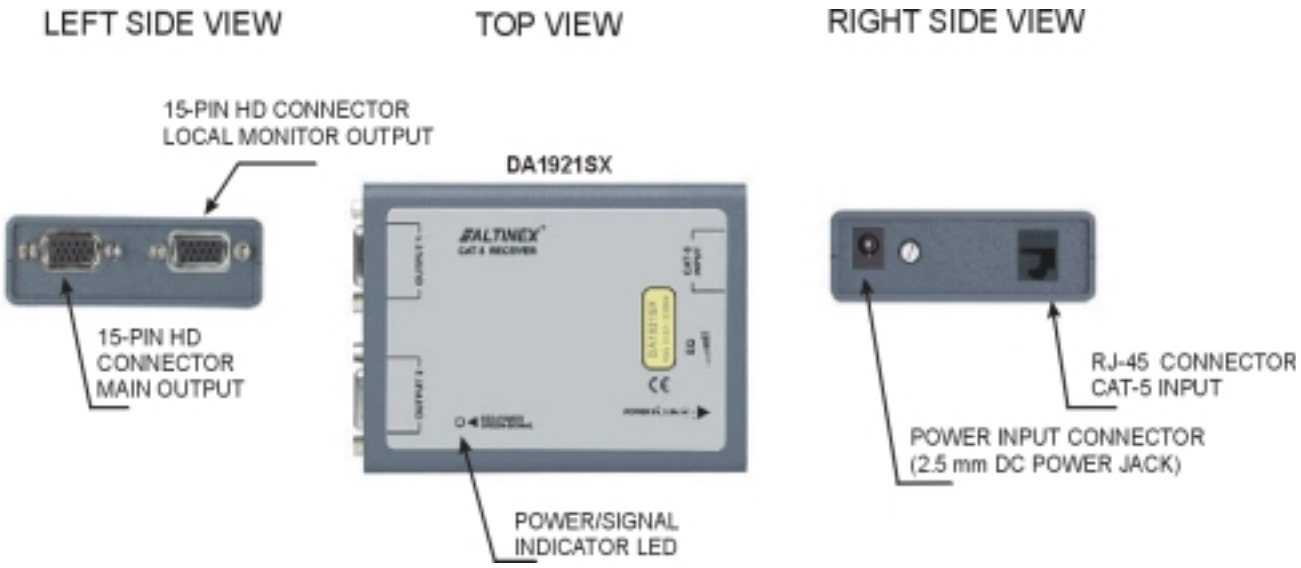
DESCRIPTION OF DA1921SX 4



4.1 INPUT

The input connector of **DA1921SX** is a RJ-45 connector, which connects the **DA1921SX** to the **DA1920SX** using a CAT-5 cable. A longer input cable may be used but lengths over 15 feet are generally not recommended to preserve the signal quality.

PIN No.	Input signals on RJ-45 connector
1	R-
2	R+
3	G-
4	B-
5	B+
6	G+
7	HOR-
8	HOR+

Table 4. **DA1921SX** Input Signals

4.2 OUTPUTS

The **DA1921SX** has two outputs with 15-pin HD female connectors. It allows the distribution of video signals to two monitors. With equalization, the **DA1921SX** sends signals through a VGA cable as far as 400 feet away.

PIN No.	Output signals on 15-pin HD female connector
1	Red
2	Green
3	Blue
4	ID Bit 4
5	Ground
6	Ground
7	Ground
8	Ground
9	+5V
10	Ground
11	Ground
12	No Connection
13	Horizontal Sync
14	Vertical Sync
15	No Connection

Table 5. **DA1921SX** Output Signals

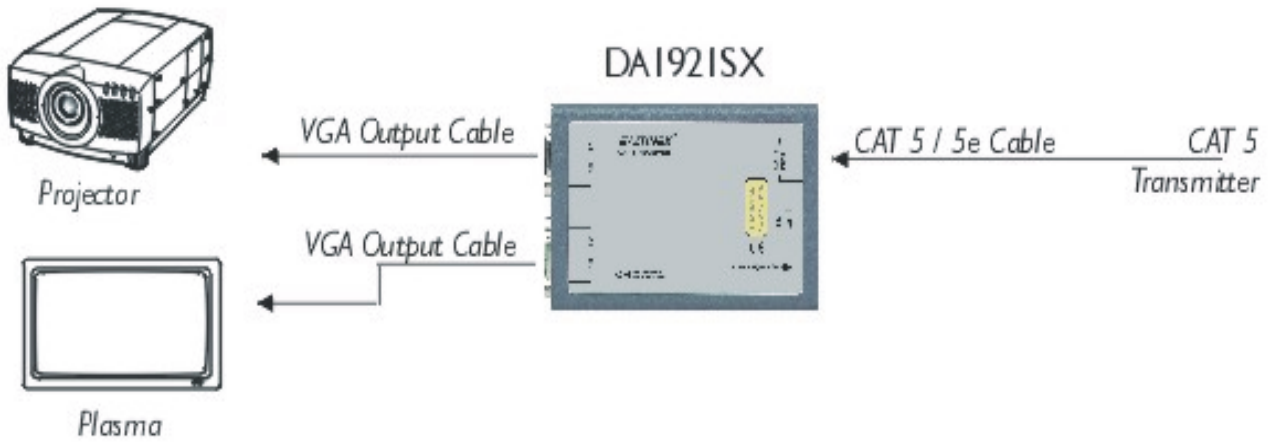
4.3 LED INDICATOR

The **DA1921SX** offers a special LED on the front panel that provides feedback to the user. When power is connected to the **DA1921SX**, the LED will turn red. When an active computer source is connected to the **DA1921SX**, the LED will turn Green, indicating that it is receiving a signal by sensing the presence of the sync portion of the signal.

4.4 MOUNTING THE DA1921SX

To mount the **DA1921SX**, ALTINEX offers optional mount mini-brackets **MB1001**, which provide wings on either side of the unit. The **DA1921SX** can be installed on a rack plate, furniture, or a wall.

APPLICATION DIAGRAM 5



INSTALLING YOUR DA1921SX 6

Step 1. Connect the 9V 500mA AC adapter's output plug to the **DA1921SX'**s power input connector - 2.5 mm DC Jack. Verify that a red LED is displayed in the top right corner of the unit on the front panel.

Step 2. Remove the protective port covers. Connect the video output from the **DA1920SX** to the input connector on the **DA1921SX** using the CAT-5 cable.

Step 3. Verify that the red LED on the face of the unit has now turned green, indicating an active source. If the LED is not green, the **DA1920SX** may not be sending video signals.

Step 4. Connect to output connectors one or two monitors (as needed) using appropriate VGA cable.

Step 5. Verify that the picture quality on Monitor 1 and Monitor 2 (connected to Output 1 and Output 2 of the **DA1921SX**) is good. If you are not receiving a signal, make sure that the display is compatible with the resolution of the computer graphics card. Note: High levels of static discharge under some conditions may shutdown the unit. To reset the unit simply, disconnect the input cable and reconnect it back.

OPERATION 7

There are no adjustments necessary to operate the **DA1921SX**, except equalization according cable length. The unit will operate successfully as long as cables are attached properly and other technical specifications are followed.

ACCESSORIES 8

Model No.	Description
TERMINATION PLUGS/GENDER CHANGERS	
MS8000TP	15-pin HD VGA termination plug
MS8144MG	15-pin HD (M) to 15-pin HD (M) gender changer
MS8145MG	15-pin HD (F) to 15-pin HD (F) gender changer
RACK MOUNTING BRACKETS	
MB1001	Rack/Wall mount mini-brackets
INPUT CABLES	**STANDARD HD-15 PIN VGA MALE TO MALE**
CB3703MR	3 ft
CB3706MR	6 ft
CB3715MR	15 ft
CB3725MR	25 ft
CB3750MR	50 ft (Super High Resolution Coaxes)
CB3775MR	75 ft (Super High Resolution Coaxes)
CB37100MR	100 ft (Super High Resolution Coaxes)
CB37150MR	150 ft (Super High Resolution Coaxes)
OUTPUT CABLES	**STANDARD HD-15 PIN VGA MALE TO FEMALE**
CB3903HR	3 ft (For local monitor)
CB3906HR	6 ft (For local monitor)
CB3915HR	15 ft (For local monitor)
CAT-5	
CB3950HR	50 ft (Super High Resolution Coaxes)
CB3975HR	75 ft (Super High Resolution Coaxes)
CB39100HR	100 ft (Super High Resolution Coaxes)
CB39150HR	150 ft (Super High Resolution Coaxes)
VGA TO RGB ADAPTER CABLES	
MS8102CA	15 pin HD Male to 5 BNC Male, 6ft
MS8104CA	15 pin HD Male to 5 BNC Male, 15ft
MS8105CA	15-pin HD Male to 5 BNC Male, 50 ft
MS8106CA	15 pin HD Male to 5 BNC Female, 6 ft
MS8112CA	15 pin HD Female to 5 BNC Male, 6ft
MS8114CA	15 pin HD Female to 5 BNC Male, 15ft
POWER SUPPLIES	
PS5502US	9V 500mA Power Supply for US
PS5512UK	9V 500mA Power Supply for UK
PS5522AU	9V 500mA Power Supply for Australia
PS5532GR	9V 500mA Power Supply for Germany
PS5542JP	9V 500mA Power Supply for Japan

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FREQUENTLY ASKED QUESTIONS 9

No:	Question	Answer
1	How many feet of cable can I use with the **DA1921SX**?	Up to 400 feet of super high resolution VGA cable for output.
2	Is the type of input cable important when I use the **DA1921SX**?	Yes, use only CAT-5 cable with a RJ-45 connector.
3	May I use coaxial cable instead ofCAT5 cable?	No, you can not use coaxial cable instead of CAT-5 cable because the Output signals are differential and Output connector is RJ-45 for CAT-5 cable.
4	May I use the **DA1921SX** power supply to power more than one unit at a time?	It is not recommended since one power supply is supplied with each unit. Please consider the **PS5581SM**, a rack mount power supply.
5	Does the **DA1921SX** pass DDC signals/ID bits between the display and computer?	Yes, because the **DA1920SX** and the **DA1921SX** can only work together.
6	What are the resolutions of input computer signals that can pass through the **DA1921SX**?	1280x1024 – UXGA 1024x768 – XGA 800x600 – SVGA 640x480 – VGA.

TROUBLESHOOTING GUIDE 10

We have carefully tested and have found no problems in the supplied **DA1921SX** unit; however, we would like to offer the following suggestions:

- Please make sure that the amplitude of input video differential signal is less than or equal to 0.75V .
- Please use ALTINEX supplied external AC adapter (supplying 9V DC at 500mA).
- Please make sure that the proper cable quality with coax conductors and Cat5 cable for video channels is used. We recommend ALTINEX made cables for best results.
- Please make sure that the outputs are terminated properly and the cable run does not exceed 800 feet for the main output RJ-45 connector.
- If a problem arises after continuous usage at higher voltage, higher temperature, higher humidity, or at other extreme environmental conditions, please correct the problem.

ALTINEX POLICY 11

11.1 LIMITED WARRANTY

ALTINEX warrants that its products and cables are free from defects in materials under normal use and service. This warranty is limited to repairing at company's factory any part or parts of the product, which upon company's examination shall disclose to be, thus defective. Products considered defective should be returned to company with transportation charges pre-paid within 2 years (90 days for cables) from date of shipment to the purchaser. The warranty is expressly instead of all other warranties expressed or implied. ALTINEX neither assumes nor authorizes any other person to assume for it any other liability in connection with the sale of the products. This warranty shall not apply to any product that shall have been repaired or altered outside of company's factory in any way so as, in its judgment, to affect its stability or reliability, or that has been subject to misuse, negligence, or accident.

11.2 RETURN POLICY

It is very important to ALTINEX that you receive the products that you have ordered and that this product meets your expectations. In the unlikely event, that an ALTINEX product needs to be returned please follow the policy below:

ALTINEX will accept product returns for a period of 30 days from authorized ALTINEX dealers. Products must be returned in an unopened package.

If a product has been opened, the restocking fees will apply. For the restocking fee amount, please contact an ALTINEX Sales Representative.

If the product is in your possession for more than 30 days, the restocking fees will apply.

ALTINEX will not accept any returns on cables or custom products.

If your product is in warranty and needs service, contact the ALTINEX Sales Department for an RMA (Return Material Authorization). Products returned without an RMA number may experience a delay in service.

If your product is out of warranty and needs service, contact the ALTINEX Sales Department for an RMA (Return Material Authorization). Products returned without an RMA number may experience a delay in service. The service charges will be quoted to you before the actual repairs are done.

11.3 CONTACT INFORMATION

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